

(Superseding LC 162)

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PUBLICATIONS RELATING TO ELECTRIC BATTERIES

This list of publications includes: (1) titles of the Bureau's publications on dry cells, storage batteries, standard cells and rectifiers for battery charging; (2) references to other papers by members of the Bureau's staff published in technical journals; (3) references to several books recently published in which details of construction and other information not specifically covered in the Bureau's publications may be found.

Any Bureau publication for which a price is given may be purchased from the Superintendent of Documents, Government Printing Office, Washington, D. C. The prices quoted are for delivery to addresses in the United States and its possessions, Canada, Cuba, Mexico, Newfoundland, and the Republic of Panama; for delivery to other countries add one-third of price of paper in your remittance.

Publications issued by the Bureau may be consulted at libraries designated as Government depositories, several of which are located in each state. Technical journals and the books which are listed are usually available at the larger libraries.

(a) Dry Cells

Electrical characteristics and testing of dry cells, B.S. Circular No. 79 (2nd ed.). (C79, 15¢)

Holler, H.D., and Ritchie, L.M., Relation of voltage of dry cells to the hydrogen-ion concentration, B.S. Sci.Papers, vol.15, p.659, 1919-20. (S364, 5¢)

Vinal, G.W., and Ritchie, L.M., Automatic apparatus for intermittent testing, B.S.Tech.Paper 146, 1920-21. (T171, 5¢)

Vinal, G.W., and Altrup, F.W., Electromotive force of cells at low temperatures, B.S.Sci.Papers, vol.17, p 627, 1922. (S434, 5¢)

American Standard Specification for dry cells and batteries, B.S.Circular 390, 1930. (C390, 5¢)

Vinal, G.W., Government specifications for dry cells, Commercial Standards Monthly, vol.7, p 35, 1930.

(b) Storage Batteries

Holler, H.D., and Braham, J.M., Cadmium electrode for storage-battery testing, B.S.Tech.Paper 146, 1919-20. (T146, out of print)

Sefton, L.B., Estimation of nitrates and nitrites in battery acid, B.S.Tech.Paper 149, 1920. (T149, 5¢)

Operation and care of vehicle-type batteries, B.S.Circular No.92, (C92, 30¢)

Vinal, G.W., and Snyder, C.L., Oscillograph measurements of current and voltage in the battery circuit of automobiles, B.S.Tech.Paper 186, 1921. (T186, out of print)

Vinal, G.W., and Ritchie, L.M., A new method for determining the rate of sulphation of storage-battery plates, B.S.Tech.Papers, vol.17, p 117, 1922-24. (T225, 5¢)

Vinal, G.W., and Altrup, F.W., Electromotive force of cells at low temperatures, B.S.Sci.Papers, vol.17, p 627, 1922. (S434, 5¢)

Snyder, C.L., Measurement of electrical resistance and mechanical strength of storage battery separators, B.S. Tech.Papers, vol.18, p 619, 1924-5. (T271, 10¢)

Storage batteries, ignition, lighting, and starting. Federal Standard Stock Catalog, Specification Symbol W-B 131, 1930. (July 22, 1930, 5¢)

Craig, D.N., Determination of small quantities of volatile organic acids in sulphuric-acid solutions, B.S.Jour. Research, vol.6, p 169, 1931. (RP267, 5¢)

Vinal, G.W., and Craig, D.N., Viscosity of sulphuric acid solutions used for battery electrolytes, B.S.Jour. Research, vol.10, p 781, 1933. (RP566, ¢)

Vinal, G.W., Craig, D.N., and Snyder, C.L., Composition of grids for positive plates of storage batteries as a factor influencing the sulphation of negative plates, B.S.Jour. Research, vol.10, p 795, 1933. (RP567, ¢)

(c) Rectifiers

Schrodt, J.P., and Holler, H.D., Theory and performance of rectifiers, B.S.Tech.Papers, vol.18, p 465, 1924-25. (T265, 20¢)

(d) Standard Cells and Potential Measurements

Wolff, F.A., and Waters, C.E., Preliminary specifications for Clark and Weston cells, B.S.Bull.vol.3, p 623, 1907. (S67, out of print)

Wolff, F.A., and Waters, C.E., Clark and Weston standard cells; B.S.Bull, vol.4, p 1, 1907-8. (S70, out of print)

Wolff, F.A., and Waters, C.E., The electrode equilibrium of the standard cell, B.S.Bull.vol.4, p 81, 1907-8. (S71, out of print)

Wolff, F.A., Temperature formula of the Weston standard cell, B.S.Bull.vol.5, p 309, 1908-9. (S104, out of print)

Announcement of a change in the value of the international volt, B.S.Circular No.29, 1910. (C29, out of print)

Shoemaker, M.P., and McKelvy, E.C., The two common failures of the Clark standard cell, B.S.Sci.Papers, vol.16, p 409, 1920. (S390, 5¢)

Holler, H.D., A method of studying electrode potentials and polarization, B.S.Sci.Papers, vol.20, p 153, 1924-26. (S504, 15¢)

Vinal, G.W., International comparison of electrical standards, B.S.Jour. Research, vol.8, p 729, 1932. (RP448, 5¢)

Park, J.H., Effect of service temperature conditions on the electromotive force of unsaturated portable standard cells, vol.10, p 89, 1933. (RP518, 5¢)

Vinal, G.W., and Howard, M.L., Effect of glass containers on electromotive force of Weston normal cells, B.S. Jour.Research, vol.11, p 1933. (RP)

OTHER PUBLICATIONS RELATING TO BATTERIES BY MEMBERS OF THE BUREAU'S STAFF

The following publications are not included in the list of publications issued by the Bureau and are not obtainable from the Superintendent of Documents.

(a) Dry Cells

Vinal, G.W., and Ritchie, L.M.; Electrical characteristics of dry cells, Chem.and Met.Eng. (McGraw-Hill Publishing Co., New York, N.Y.) vol.27, pp 546 and 603, 1922.

Vinal G.W., The Government specification for dry cells, No. 3. (National Association of Purchasing Agents, New York, N.Y.) 1930.

(b) Storage Batteries

Vinal, G.W., and Schramm, G.N., Storage battery electrolytes, Trans.American Inst.Elec.Eng. (American Inst.Elec.Engineers, New York, N.Y.) vol.44, p 288, 1925.

Vinal, G.W., Storage batteries (John Wiley and Sons, New York, N.Y.) 2nd ed. 1930 (see entry on page 4 of this circular).

Vinal, G.W., Storage batteries, Jour.Opt.Soc.; and Rev. Sci. Instr. (Ithaca, N.Y.) vol.11, p 263, 1925.

Vinal, G.W., and Snyder, C.L., Effect of temperature and other factors on the performance of storage batteries, Trans. American Electrochemical Soc. (American Electrochemical Society, New York, N.Y.) vol.53, p 233, 1928.

(c) Standard Cells and Potential Measurements

Vinal, G.W., Maintenance of the volt, Trans.American Electrochemical Soc. (American Electrochemical Society, New York, N.Y.) vol.54, p 247, 1928.

Vinal, G.W., Units of electrical measurement, Trans.Amer. Electrochem. Soc. (American Electrochemical Society, New York, N.Y.) vol.55, p 43, 1929.

REFERENCES TO BOOKS ON BATTERY SUBJECTS

The Bureau of Standards receives frequent inquiries regarding manufacturing processes and for other information which is not specifically covered in its publications. To meet the needs of such inquirers a very brief list of recent books relating to primary batteries and storage batteries is given below with a brief statement of the scope of the book and the name of the author and publisher.

(a) Primary Batteries

Cooper, W.R., Primary batteries (D.Van Nostrand Co., New York, N.Y.) 2nd edition, 1917. Theory, construction and use of the various forms of primary batteries.

(b) Storage Batteries

Vinal, G.W., Storage batteries, (John Wiley & Sons, New York, N.Y.) 2nd edition, 1930. Describes manufacturing processes, properties of the electrolyte, theory of reactions, operating characteristics and testing. Uses for storage batteries are discussed.

Crennell, J.T., and Lea, F.M., Alkaline accumulators (Longmans Green and Co., New York, N.Y.), 1928. Development, construction and manufacture of alkaline storage batteries including several types. Electrochemical theory, electrical characteristics, operation, maintenance, and applications.

Arendt, Morton, Storage batteries (D.Van Nostrand Co., Inc., New York, N.Y.) 1928. A general book on the subject, describing manufacture, assembly, upkeep and care of batteries.

Jansky, C.M., and Wood, H.P., Elements of storage batteries, (McGraw-Hill Book Co., Inc., New York, N.Y.), 1923.

Elementary discussion of storage batteries including care, maintenance, repair, and applications of batteries.

Wright, J.C., Battery service work (volume III of Automotive Repair) (John Wiley & Sons, Inc., New York, N.Y.), 1923.

Analyzes eighteen repair jobs and discusses elementary principles of electricity and the behavior of storage batteries including farm lighting plants.

Witte, O.A., The automobile storage battery (American Bureau of Engineering, Inc., Chicago, Ill.), 3rd ed. 1922. A book for the repairman, describing care and repair of batteries, shop equipment and business methods. Refers also to radio and farm-lighting batteries.